

# SIEMENS

PATENT  
Attorney Docket No. 2001P05854US02

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Inventor:	R. Buergel	)	Group Art Unit:	1792
		)		
Serial No.:	10/786,349	)	Examiner:	M. G. Miller
		)		
Filed:	February 25, 2004	)	Confirmation No.:	4552
		)		
Title	METHOD FOR RESTORING THE MICROSTRUCTURE OF A TEXTURED ARTICLE AND FOR REFURBISHING A GAS TURBINE BLADE OR VANE			

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Sir:

### Response to Notice of Non-Compliant Appeal Brief

This paper is in response to the Notice of Non-Compliant Appeal Brief mailed 06/12/2009.

This paper contains replacement sections for the brief filed by the Appellant on 08 May 2009. Only those sections found to be defective are provided herein for replacement. Replacement Section 6 begins on page 2 and replacement Section 7 begins on page 3.

(Please proceed to page 2.)

Please replace Section 6 of the previously filed brief with the following revised section.

6. GROUNDS OF REJECTION TO BE REVIEWED UPON APPEAL - 37 CFR  
41.37(c)(1)(vi)

The grounds for rejection for claims 13, 15, 16, 18, 21, 24, 30-32 and 34 is that each claim is anticipated under 35 USC § 102(b) by Czech et al. (EP 0525545, hereinafter Czech '545).

The grounds for rejection for claims 14, 17, 19, 20, 28 and 29 is that each claim is made obvious under 35 USC § 103(a) by Czech '545 in view of Schaeffer et al. (USPN 6,500,283, hereinafter Schaeffer '283).

The grounds for rejection for claims 22-23 is that each claim is made obvious under 35 USC § 103(a) by Czech '545 in view of Saltzman et al. (USPN 4,878,953, hereinafter Saltzman '953).

The grounds for rejection for claim 25 is that it is made obvious under 35 USC § 103(a) by Czech '545 in view of Olson (USPN 4,933,239, hereinafter Olson '239).

The grounds for rejection for claims 26-27 is that each claim is made obvious under 35 USC § 103(a) by Czech '545 in view of Kashirin et al. (US PFPub 2003/0091755, hereinafter Kashirin '755).

The grounds for rejection for claim 33 is that the claim is made obvious under 35 USC § 103(a) by Czech '545 in view of Haydon (EP 0186797).

Please replace Section 7 of the previously filed brief with the following revised section.

7. ARGUMENT 37 CFR 41.37(c)(1)(vii)

7A. Arguments applicable to claims 13-27 and 30-34:

- Claims 13, 15-16, 18, 21, 24, 30-32 and 34 stand rejected under 35 USC 102(b) as being anticipated by Czech '545. Claims 14, 17, 19, 20, 28 and 29 stand rejected under 35 USC § 103(a) by Czech '545 in view of Schaeffer.
- Claims 22-23 stand rejected under 35 USC § 103(a) by Czech '545 in view of Saltzman '953.
- Claim 25 stands rejected under 35 USC § 103(a) by Czech '545 in view of Olson '239).
- Claims 26-27 stand rejected under 35 USC § 103(a) by Czech '545 in view of Kashirin '755).
- Claim 33 stands rejected under 35 USC § 103(a) by Czech '545 in view of Haydon.

The Appellant traverses all of these claim rejections because the Czech '545 reference fails to teach each and every element as set forth in independent claims 13, 16 and 30. All three of these independent claims contain similar limitations which are argued together below, and all of these claims rise and fall together.

MPEP 2131 provides that a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. The identical invention must be shown in as complete detail as contained in the claims.

The prior art reference relied upon by the Examiner in the §102(b) rejection does not contain every element and limitation recited in independent claims 13, 16 and 30.

Claims 13 and 16 recite in part "... **restoring the microstructure of the superalloy body** by performing a **solution heat treatment** on the body ...." In contrast, Czech '545 teaches a "re-diffusion treatment following an alluminization" which is not a restoration of "...the microstructure of the superalloy body .... [or] a solution heat treatment" as required by claims 13 and 16. The Examiner contends that the "re-diffusion treatment" of Czech '545 is a solution heat treatment as claimed above, and cites page 5, lines 17-21 of Czech '545 to support his contention. However, the cited text of Czech '545 recites in part:

...the temperature ranges are to be applied in a re-diffusion treatment ...  
However, **the temperature should always be kept well below the solution temperature of the base material alloy.** [emphasis added]  
(page 5, lines 18-20).

Applicants respectfully submit that Czech '545 itself teaches that the "re-diffusion treatment" is not a solution treatment because the treatment temperature "**should always be kept well below the solution temperature of the base material alloy.**" Moreover, the "re-diffusion treatment" of Czech '545 can **not** achieve a restoration of the microstructure of the superalloy body as required by claims 13 and 16 because the re-diffusion "**temperature should always be kept well below the solution temperature of the base material alloy.**"

Claim 30 recites in part "... **performing a solution heat treatment** on said article ... wherein the temperature of said solution heat treatment is **at least the solution temperature of the  $\gamma'$ -phase ....**" As discussed above, the "re-diffusion treatment" of Czech '545 **can not be a solution treatment** because the Czech re-diffusion "...temperature should **always be kept well below the solution temperature of the base material alloy**" and therefore is **not** "**at least the solution temperature of the  $\gamma'$ -phase**" as required by claim 30.

In the Office Communication dated March 9, 2009, the Examiner further contends that the "re-diffusion treatment" of Czech '545 is Appellants' claimed solution heat treatment citing "Examples 1-6 of Czech, which show only partial diffusion of the aluminium into the non-corroded layer of the blade." The Examiner has mistakenly interpreted Examples 1-6 as showing partial diffusion. Czech '545 again clearly states "... the aluminide coating being of such a depth as to enclose all the products of corrosion ..." (page 3, lines 10-13). Therefore, the aluminide coating merely encapsulates the corrosion layer, and does not penetrate, or diffuse, into the lattice of the base alloy. Furthermore, the purpose of the aluminizing step of Czech '545 is to clean the base material of corrosion. If aluminium of the Aluminide coating were to diffuse into the base material, the cleaning effect would be lost and the base material part would effectively be destroyed due to contamination of the lattice with the aluminium in a manner identical to that discussed by Czech '545 at page 2, lines 38-43.

Therefore, as stated above, Czech '545 explicitly warns that "**the temperature should always be kept well below the solution temperature of the base material alloy**" (page 5, lines 18-20) to avoid diffusion of aluminium into the base material. Since Czech teaches staying

below the solution temperature of all phases of the base material, and claims 13, 16 and 30 require that the temperature be above the solution temperature of at least one phase, the Czech '545 can be said to **teach away** from the presently claimed invention.

Furthermore, in the English language different words have different meanings. In Czech '545, the word used to describe the aluminizing heat treatment that the Examiner has relied upon is "re-diffusion" and Czech '545 uses the word "solution" to warn against approaching the solution temperature of the base material alloy. Therefore, Czech '545 is teaching a "re-diffusion" heat treatment which is clearly not a "solution" heat treatment as required in independent claims 13, 16 and 30.

7B. Arguments applicable to claims 28 and 29:

- Claims 28 and 29 are rejected under 35 USC 103(a) as being un-patentable over Czech '545 in view of Schaeffer '283.

Appellants traverse the rejection of claims 28 and 29 under 35 USC 103(a) because Czech '545 teaches away from the limitations of claims 28 and 29, and the combination of Czech '545 in view of Schaeffer '283 fails to teach or suggest the claimed invention as embodied in claim 28 and 29.

As discussed above, Czech '545 fails to teach a solution heat treatment and specifically teaches away from Appellants' claimed invention by requiring that the "re-diffusion" temperature be kept below the solution temperature of the base material alloy (which as the Examiner points out, means that the temperature must be below the solution temperature of each phase present in the alloy). In contrast to the teachings of Czech '545, Appellants claim performing a solution heat treatment where "...the temperature of said solution heat treatment is **at least the solution temperature of the  $\gamma$  phase ...**" as recited in claim 28 and 29.

Furthermore, the addition of Schaeffer et al. does not correct this deficiency of the primary reference and the combination does not teach or suggest the claim limitations. Therefore the combination of Czech '545 in view of Schaeffer '283 fails to obviate claims 28 and 29 in accordance with MPEP §2143.01 and the §103(a) rejections must fail.

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Respectfully submitted,

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